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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,893	11/28/2001	Harunobu Kusumoto	Q67476	8024

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MCGINN & GIBB, PLLC
8321 OLD COURTHOUSE ROAD
SUITE 200
VIENNA, VA 22182-3817

EXAMINER

PASSANITI, SEBASTIANO

ART UNIT	PAPER NUMBER
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3711

10

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,893

Applicant(s)

KUSUMOTO, HARUNOBU

Examiner

Sebastiano Passaniti

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 16-28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-12 and 16-28 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is responsive to communication received 12/30/2003 – Amendment A and Revocation of Power of Attorney.

Claims 13-15 have been canceled, as directed.

Claims 1-12 and 16-28 remain pending.

Following is an action on the MERITS:

Claim 27 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 24. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

The rejection under §103 below substantially repeats a portion of the rejection presented in a previous Office action. To facilitate understanding of the rejection, those portions newly added to the rejection have been italicized.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 and 16-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noble in view of Beach, Thorne, Sasamoto *and Kosmatka*. Noble shows an arrangement in which the rear of the striking face is provided with a thin-walled portion as well as a thick-walled

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portion. The striking face is in the form of a plate and is made of metal. Noble differs from the claimed invention in that Noble does not disclose a rolling procedure for forming the thick-walled and thin-walled portions, nor does Noble detail that the face is formed by forging or machining, with either process combined with a rolling process. Last, Noble does not discuss that the rolling direction is oriented with the short dimension of the club or that the crystal grains maintain a specific orientation within the thin-walled portion. Beach shows it to be old in the art to fashion a club head face from either forging or rolling or a combination thereof. See col. 4, lines 16-18 in Beach. Thorne acknowledges that forging or machining may be used to fabricate the diverse parts of the club head. See col. 2, lines 60-64 in Thorne. These processes are well-known to the skilled artisan in the golf art and the selection of the appropriate manufacturing technique in view of material and cost considerations would have been obvious at the time of the invention. Sasamoto takes advantage of a rolling procedure to fabricate the striking face plate and orients the longitudinal direction of the crystal grains within the material of the striking face plate such that the grains run parallel to the vertical, or short, dimension of the head. With this arrangement, Sasamoto minimizes the amount of cracking to which the face plate would otherwise be susceptible to with the crystal grains oriented in a non-parallel fashion with respect to the vertical dimension of the striking plate. Moreover, Sasamoto recognizes that the formation of the striking plate via a rolling process in which the crystal grains are oriented as detailed above goes far to produce a desirable weight reduction of the head, enables thinning of the club head shell while maintaining the strength and integrity of the shell and helps to improve the directional stability of a struck ball. See col. 9, lines 1-65 in Sasamoto. In view of the patent to Sasamoto, it would have been obvious to modify the device in the cited art reference to Noble by

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providing for a specific grain orientation of the material that makes-up the striking face, the motivation being to reduce the likelihood that the striking face material will crack under normal use. Specific to claim 2, Figures 9 and 10 in Noble show a smooth transition between the thin-walled and thick-walled portions. Specific to claim 3, the transition from thick-walled to thin-walled portions is clearly gentler in a heel-to-toe direction, rather than a top-to-sole direction, as evidenced by claim 10, since the length dimension is greater than the height or vertical dimension of the striking plate. Specific to claim 4, the thickness of the thick-walled portion is at least 10% greater than the thickness of the thin-walled portion. Specific to claim 5, the center of the striking plate is thick-walled while the peripheral region is thin-walled. Specific to claims 6 and 10-12, note the comments with respect to the Sasamoto reference, *supra*. As to claim 7, note that Thorne obviates the use of a machining process, as discussed above. As to claim 8, see Figures 9 and 10 in Noble, which clearly show that the peripheral edge is thinned. As to claim 9, Thorne obviates the use of a forging operation to fabricate the head. Specific to claims 16-19, the claimed thickness of the fringe surface is not deemed critical, as the skilled artisan, being familiar with the various manufacturing techniques available at the time of the invention including forging, machining and rolling, would have found it obvious to dimension the fringe portion to a sufficient thickness so that a welding operation could have been performed without jeopardizing the structural integrity of the striking plate connection at its juncture with the front portion of the club head body. *Specific to claim 20, note the comments above regarding the teachings of Beach. As to claims 21 and 22, the claimed dimensions are not deemed critical, as the thickness would have depended upon the material used for the face portion. As to claim 23, note the comments discussed above with respect to Sasamoto. As to claims 24 and 27 (apparent*

duplicates of one another), note that Noble makes use of titanium material. As to claims 25 and 26, note the comments above for claims 16-19. As to claim 28, note the comments for claim 1, supra. Regarding the specific new limitation found in claims 1 and 16, while it may be argued that the base reference to Noble shows a flat surface at the thickened wall portion, the teaching reference to Kosmatka is cited to show without question that at least a portion of the thickened central portion of the striking member may indeed be substantially flat in profile (Figure 2A).

Claims 1-11, 16-22 and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noble in view of Kosmatka. The patent to Noble shows every feature claimed with the exception of clearly showing a flat surface at the thick walled portion of the face plate. Kosmatka clearly shows a generally flattened portion (Figure 2) for the region of greatest thickness at the center and to the rear of the striking plate. Kosmatka discusses that the thickness of the striking plate may be altered depending on the materials used for the face and the preferred size and shape of the head (col. 5, lines 30-50). In view of the patent to Kosmatka, it would have been obvious to modify the device in the cited art reference to Noble by providing a thick-walled region on the face portion, said thick-walled region further having a flat surface, the motivation being to selectively stiffen the striking plate. With respect to the remaining features in the claims, it is noted that a complete exposition of how Noble meets the remaining claimed structural limitations has been presented in the rejection, supra. A further explanation will not be presented here, for brevity. However, it is noted that the "method" limitations scattered throughout the claims may be interpreted as not having any limiting effect in these structure claims. By way of example only, the fact that the face portion is required to be "rolled" (claim 1), or that a specific "rolling direction" (claim 6) be realized, or that a thin-walled surface be

“machined” (claim 7), or that the thickness of the thick-walled portion is the same as the plate “from which the face portion is forged”, or that the second portion has a thickness formed by “machining” (claim 28) has no limiting effect in these structure claims. The skilled artisan would have been familiar with the customary operations available for manufacturing and finishing the diverse parts of a club head and would have found it obvious to use any one or combination of a rolling, machining or forging operation. By this interpretation, the only structure within these claims appears to include a face portion having at least two portions of diverse thickness.

Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noble in view of Kosmatka and Sasamoto. Noble in view of Kosmatka has been discussed above. Sasamoto takes advantage of a rolling procedure to fabricate the striking face plate and orients the longitudinal direction of the crystal grains within the material of the striking face plate such that the grains run parallel to the vertical, or short, dimension of the head. With this structural arrangement, Sasamoto minimizes the amount of cracking to which the face plate would otherwise be susceptible to with the crystal grains oriented in a non-parallel fashion with respect to the vertical dimension of the striking plate. Moreover, Sasamoto recognizes that the formation of the striking plate via a rolling process in which the crystal grains are oriented as detailed above goes far to produce a desirable weight reduction of the head, enables thinning of the club head shell while maintaining the strength and integrity of the shell and helps to improve the directional stability of a struck ball. See col. 9, lines 1-65 in Sasamoto. In view of the patent to Sasamoto, it would have been obvious to modify the device in the cited art reference to Noble by providing for a specific grain orientation of the material that makes-up the striking face, the

motivation being to reduce the likelihood that the striking face material will crack under normal use.

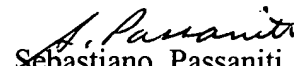
RESPONSE TO ARGUMENTS

Applicant's arguments with respect to claims 1-12 and 20-28 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sebastiano Passaniti whose telephone number is 703-308-1006. The examiner can normally be reached on Mon-Fri (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Hughes can be reached on 703-308-1806. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sebastiano Passaniti
Primary Examiner
Art Unit 3711

S.Passaniti/sp
April 5, 2004